

WHAT IS CLAIMED IS:

1. An IC card capable of sending/receiving data by a plurality of data transfer methods and including a plurality of OSs respectively corresponding to said plurality of data transfer methods, comprising:

5 transfer method determining means for determining, on the basis of externally received data, which of said plurality of data transfer methods is employed for data transfer with an external device;

 OS applicability determining means for determining whether or not a first data transfer method corresponding to a currently employed OS out of said plurality of data
10 transfer methods accords with a second data transfer method determined by said transfer method determining means; and

 OS switching means for switching said currently employed OS to another OS out of said plurality of OSs when said OS applicability determining means determines that said first data transfer method does not accord with said second data transfer method,
15 wherein one of said plurality of OSs is activated when power is supplied.

2. The IC card of Claim 1, further comprising:

 a storage circuit for storing static information for use in selecting an initial OS to be activated when power is supplied to said IC card; and

 initial OS selecting means for selecting said initial OS from said plurality of OSs
20 on the basis of said static information stored in said storage circuit,

 wherein said initial OS selected by said initial OS selecting means is activated when power is supplied.

3. The IC card of Claim 2,

 wherein said storage circuit stores said plurality of OSs.

25 4. The IC card of Claim 2,

wherein said storage circuit stores, as said static information, information about response times demanded for in said plurality of data transfer methods respectively corresponding to said plurality of OSs, and

said initial OS selecting means selects, as said initial OS, one of said plurality of OSs corresponding to a data transfer method in which said demanded response time is relatively short.

5 5. The IC card of any of Claims 4,

wherein each of said response times is a response time to an initial command involved in data transfer between said IC card and the external device.

10 6. The IC card of Claim 2,

wherein said storage circuit stores, as said static information, information about response times actually necessary in said plurality of data transfer methods respectively corresponding to said plurality of OSs, and

said initial OS selecting means selects, as said initial OS, one of said plurality of OSs corresponding to a data transfer method in which said actually necessary response time is relatively long.

15 7. The IC card of any of Claims 6,

wherein each of said response times is a response time to an initial command involved in data transfer between said IC card and the external device.

20 8. The IC card of Claim 2,

wherein said storage circuit stores, as said static information, information about shifts between demanded response times and actually necessary response times in said plurality of transfer methods respectively corresponding to said plurality of OSs, and

said initial OS selecting means selects, as said initial OS, one of said plurality of OSs corresponding to a data transfer method in which said shift is relatively large with said

actually necessary response time longer than said demanded response time.

9. The IC card of any of Claims 8,

wherein each of said response times is a response time to an initial command involved in data transfer between said IC card and the external device.

5 10. The IC card of Claim 2,

wherein said storage circuit stores, as said static information, information about times respectively necessary for activating said plurality of OSs, and

said initial OS selecting means selects, as said initial OS, one of said plurality of OSs that needs a relatively long time for activation.

10 11. The IC card of Claim 2,

wherein said storage circuit is a rewritable nonvolatile memory.

12. The IC card of Claim 1, further comprising:

a storage circuit for storing dynamic information for use in selecting an initial OS to be activated when power is supplied to said IC card;

15 initial OS selecting means for selecting said initial OS from said plurality of OSs on the basis of said dynamic information stored in said storage circuit; and

information updating means for updating said dynamic information stored in said storage circuit,

20 wherein said initial OS selected by said initial OS selecting means is activated when power is supplied.

13. The IC card of Claim 12,

wherein said storage circuit stores, as said dynamic information, information about activation frequencies of said plurality of OSs, and

25 said initial OS selecting means selects, as said initial OS, one of said plurality of OSs whose activation frequency is large.

14. The IC card of Claim 12,

wherein said storage circuit stores, as said dynamic information, information about activation histories of said plurality of OSs, and

said initial OS selecting means selects, as said initial OS, one of said plurality of OSs that has been activated immediately previously.

15. The IC card of Claim 12,

wherein said storage circuit is a rewritable nonvolatile memory.

16. An OS activation method for an IC card capable of sending/receiving data by a plurality of data transfer methods and including a plurality of OSs respectively corresponding to said plurality of data transfer methods, comprising:

an OS activating step of activating one of said plurality of OSs when power is supplied to said IC card;

a transfer method determining step of determining, on the basis of an externally received data, which of said plurality of transfer methods is employed for data transfer with an external device;

an OS applicability determining step of determining whether or not a first data transfer method out of said plurality of data transfer methods corresponding to said OS activated in the OS activating step accords with a second data transfer method determined in the transfer method determining step; and

an OS switching step of switching said OS activated in the OS activating step to another OS out of said plurality of OSs when it is determined that said first data transfer method does not accord with said second data transfer method in the OS applicability determining step.

17. The OS activation method for an IC card of Claim 16,

wherein when power is supplied to said IC card, an initial OS to be activated in

response to power supply to said IC card is selected from said plurality of OSs on the basis of static information for use in selecting said initial OS and said selected initial OS is activated in the OS activating step.

18. The OS activation method for an IC card of Claim 16,

5 wherein when power is supplied to said IC card, an initial OS to be activated in response to power supply to said IC card is selected from said plurality of OSs on the basis of dynamic information for use in selecting said initial OS and said selected initial OS is activated in the OS activating step, and

10 said OS activation method further comprises an information updating step of updating said dynamic information.